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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,865	09/30/2003	Warren S. Letzsch	696-254A	6289

7590 05/03/2004

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,865

Applicant(s)

LETZSCH, WARREN S.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 010904.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Objections

Claims 17 and 21 are objected to because of the following informalities: Claim 17 is objected to because it does not further limit claim 11. The temperature range contained in claim 17 is the same as that which is contained in claim 11. Claim 21 is objected to because the word "removed" in line 2 is incorrect and should apparently be "remove". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (EP 1046696A2).

The Xu reference discloses an FCC process that comprises cracking a hydrocarbon in a first reaction zone in the presence of steam and a cracking catalyst. The temperature in this first reaction zone ranges from 530° to 620°C (986°-1148°F). The weight ratio of catalyst to feed in the first zone ranges from about 3:1 to 15:1. The resulting product from the first reaction zone and the catalyst are then passed to a second reaction zone in which the product from the first reaction zone is converted to produce a product. Conditions in the second reaction zone include temperatures ranging from 420° to 550°C (788°-1022°F) and catalyst to feed ratios ranging from about 3:1 to 18:1. The weight ratio of steam to feed ranges from 0.03:1 to 0.3:1. The spent catalyst is then separated from the catalyst, the catalyst is stripped and regenerated, and then is recycled to the reactor. The process results in the production of a product that comprises a gasoline fraction as well as olefins.

The apparatus used in the process includes a middle section corresponding to the second reaction zone that has a diameter that is 1.5 to 5 times the diameter of the first reaction zone. The apparatus also contains means for feeding the feedstock and catalyst to the reaction zones and a means for separating the product from the catalyst. See paragraphs 0018, 0019, 0022-0026, 0028, 0029, 0031, and 0034.

The Xu reference does not disclose the weight hourly space velocities of the first and second reaction zones, does not disclose the conversion in the first reaction zone as in claim 15, and does not disclose converting a system to obtain the disclosed apparatus.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Xu by utilizing the claimed space velocities in each reaction zone and percent conversion in the first reaction zone because one would adjust

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these parameters in order to obtain a process that produces the disclosed products in the most efficient manner.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the teaching of the Xu reference by modifying an existing FCC apparatus to obtain the disclosed apparatus because it would be far more cost effective to modify an existing apparatus than to build an entirely new apparatus.

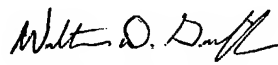
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
April 30, 2004